State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

March 3, 1997

Mr. Dick Shumway
Sunray Mineral Products
1810 Shumway
Moab, Utah 84532

Re: Application for exemption from the Utah Coal Mining Rules, Lease #43377, Sunray Mineral Products, Folder #2, Wayne County, Utah

Dear Mr. Shumway:

The Division has reviewed your application dated December 2, 1996, which requests an exemption from the R645 Utah Coal Mining Rules in order to conduct mining on lease ML #43377. The basis of your request for exemption is that the "carbonaceous material has no value as coal" and would be marketed as an Organic Soil Conditioner.

Our analysis of the application, indicates that an exemption to the R645 Utah Coal Mining Rules cannot be granted for the following reasons:

- The application does not qualify for an exemption under any of the exceptions allowed under R645-100-411 through R645-100-415.
- Sunray Mineral Products' right-of-entry is through a State Institutional and Trust Lands (SITLA) coal lease. Even though the material may not have apparent value as a fuel it is still considered to be coal and would be subject to the coal mining regulations.
- This area was previously permitted as a coal mine.
- Even if the material was not considered to be coal, the rights to non-coal minerals are held by another lessee.

Regardless of the quality of the coal or its intended use, as long as SITLA defines the material as coal and as long as the right to mine is limited to coal only, DOGM is compelled to treat the material as coal and apply the R645 Regulations. Your application for exemption is hereby denied.

Please review the enclosed technical analysis which further explains the issues

considered for this determination. You may be able to explore other avenues for mining this through negotiation with SITLA and the non-coal mineral lease holder.

If you have any questions, please call.

Sincerely,

Mary Ann Wright
Associate Director for Mining

tt
Enclosure
cc: Jim Cooper, SILTA
Wayne Hedberg, w/o
Jim Smith, w/o
Daron Haddock, w/o

O:\SUNRAY.HUM

Wayne
Tony
Louis

Atlas ...

5/055/006

SUNRAY MINERAL PRODUCTS

1810 Shumway
Moab, Utah 84532
801.259.7893
Fax 801.259.7894

December 02, 1996

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Mr. Lowell Braxton, Deputy Director

A Copy Wayne, Daron
Joe, Mark
(all)
cover letter
Pam

Dear Mr. Braxton,

We hold Utah State coal lease, ML #43377 and we are making application for exemption from the R645 Utah Coal Mining Rules with which to work this lease. An overview of our position, is outlined below.

For lease definition this carbonaceous material may resemble coal, but any relationship it has to real coal stops there. This is not a shale. It is a hydrocarbon material, but, as a coal there are too many strikes against it to compete with the good Utah coal available. The coal on this lease is a weathered low-ranking coal. Our coal could be classified as a "leonardite coal" and/or a" Humate" type material by its very nature and utilization. Similar material is produced at other locations. New Mexico + others

Appendix A contains excerpts from several reports and articles on Humates, Leonardite and weathered coal. Also several proximate coal analysis, from channel samples of this "Leonardite coal" material at our location.

Our subject carbonaceous material, has no value as coal! It was once used for coal, and did not meet the quality standards for use in any coal burning facility, not even the trash coal burning market. One good example, of this material's very UN-coal-like nature, is its low < 3 pH level. The low pH is caused by the unique mix of natural acids which were liberated by the uncommon process of natural oxidation/decay this coal has experienced. These natural acids empower this material to eat its way out of metal containers, or the shoes off your horse, in short order.

This is no ordinary low grade coal. Deposits which contain all the remarkable amenities of this location are very rare. This material may have many detrimental characteristics which produce **"no value as coal"** (high acid content, high sulfur, high ash, & low BTU) But each of these are positive attributes for our market. In combination with the abundant freed trace minerals contained therein, make it a very good organic soil conditioner. Our aspiration to mine this material is not for any coal sale or use, but, for use as an Organic Soil Conditioner.

As Coal, NO economic market exists for this material.

1. The subject property was once permitted, in the late 1970's, as the Atlas-Dirty Devil coal mine. A great deal of effort, money and time was spent permitting the operation, mining and transporting the coal, only to have the very first train load of coal to Nevada Power rejected for its inferior quality. (information from call to NV power) The statement to the promoters, **bad coal**, equated to no market, which in turn bankrupted the operation. Thus dealing a fatal blow to the mine.

2. A telephone conversation with Mike Glasen, mine engineer, Andalex Resources, Price, Utah 4 Nov., '96. I placed this call seeking more information from producers in the Utah coal industry, to better evaluate our material and to help compare our coal with the Utah coal market. I talked with Mr. Glasen about Andalex's coal production, their coal quality, the current coal market prices and his opinion on the possibility of finding a coal buyer for our type of coal. Mr. Glasen, replied, "Present contract prices are around $20.00 per ton and spot market coal price is $15.00 per ton". He also said "the coal they produce and market, averages only 1/2% sulfur, 10% ash and 12,000 BTU. He believes the only possible market for our type of coal might be the Sunnyside Cogeneration plant, which is now burning trash coal from the old Sunnyside mine dump."

3. Call to the Sunnyside Cogeneration plant in Sunnyside, Ut. I talked with plant engineer, Rusty Netz. Our conversation centered on the Cogeneration plant fuel requirements. Mr. Netz, verified that their coal supply is coming from the Old Sunnyside mine dump and the material runs 5800 BTU and 1% sulfur. Rusty, says "The plant is using 180 ton limestone per day to clean the sulfur emissions, he said 2% sulfur would be very expensive to clean". In addition, Mr. Netz stated, "The Sunnyside mine has a 20 year supply and they would not be interested in buying any of our material". The conversation also concluded, that the freight expenses alone, from our site to the Sunnyside plant would cost more than buying a good quality replacement coal from Price which is only 20 miles away.

4. Communication with Mr. Kurt Snider, Manager of Fuel Quality, PacifiCorp. on 11/13/96. Mr. Snider states, "that although PacifiCorp's steam plants can burn a variety of coals, none would be able to burn such a fuel without great difficulty. Even if washed, our coal would not be able to compete with other coals".

As Mr. Glasen (Andalex Resources) stated, "The market price for a good coal is only $15.00 to $20.00 per ton." The market for an organic soil conditioning product is expanding worldwide and bulk product prices for this raw material, as a soil conditioner, is $36.00 to $50.00 per ton.

In summary; No market exists for this coal - as a coal. Therefore, no financial return can be earned by anyone from this low-rank, weathered coal, as coal. Again, we will not market any of this material for fuel. The subject, weathered coal, has a far greater value and potential as an organic, earth friendly, soil conditioner

The sulfur content of this coal alone makes this material nonviable for any coal burning market. Coal fired electric generation plants are burning good low sulfur coals and are spending millions of dollars building expensive scrubbers to meet stricter EPA emission standards. Higher costs and stiffer regulation means no market will for the high sulfur coals, as coal.

Therefore, we appeal to DOGM for an exemption from the very cost prohibitive, R645 Coal mining rules in order to mine this deposit as a mineral combination soil product. The exemption will allow us the opportunity to put these Utah State Trust lands to work, thus providing some monetary benefit to our state schools from a worthless low grade coal. Which, as I understand the system, State Trust lands are owned and operated for the purpose of generating income to the schools.

After you have had time to go over this information, I would appreciate the opportunity to clarify and consult with you on this situation.

Sincerely,

Dick Shumway
Sunray Mineral Products

cc: David T. Terry, Director, Trust Lands Administration

Appendix A

Geology and production of humate and weathered coal in New Mexico
Society of Mining Engineers of AIME, Transactions Vol. 280-2105
G.H. Roybal and J.M. Barker

Abstract - Humate mining in New Mexico is a small industry [16,079 cu yd, valued at $395,894 for 1983] with three mines active in 1985. Either humate (carbonaceous clay stones rich in organic matter) or weathered coal ("leonardite") high in Humic acid are mined....The humate and "leonardite" now mined in New Mexico are used primarily as soil conditioners or as drilling mud additives.....

Terminology - Humic material is not a pure substance so an ambiguous and complex terminology is in use by geologists, chemists, soil scientists, agronomists, and producers. Material mined for its Humic acid content is an extremely variable mixture of base - soluble Humic, Fulvic, and ulvic acids and their salts, formed during partial or complete decay of organic matter. This decay releases a high molecular-weight organic material that is darkly colored, partly colloidal, and acidic.

Humate characteristics and uses

The following definition and description of humate was published by V.E. Swanson, 1977, U.S. Geological Survey, Denver, Colorado, v. 4, no. 1, p. 1-18.

"Humate is a class or group of natural carbonaceous (organic) substances that is characterized by its being readily soluble in slightly alkaline water. It commonly occurs as a brownish-black gel in peat, a solid brownish-black translucent material associated with low-rank coal (lignite or subbituminous), or sediments, especially sandstone. Humate includes materials variously termed dopplerite, leonardite, dakalite, hasemanite, humogelite, native Humic acid, and similar types of natural organic substances..... Humates are typically formed during the process of plant decay, or as a result of slow natural oxidation of lignite or subbituminous coal. Organic substances are converted into water soluble colloidal form (Humic, Fulvic acid) during the subsurface weathering of coal. The colloids can then be transported in natural waters or remain in place, where they are flocculated or precipitated to form humate. The flocculation or precipitation results from a natural change in the chemistry of the water, through a change to an acid state (pH generally less than 5), or a change on encountering water containing excess metal ions such as calcium, iron, or copper. Besides use as a soil conditioner, other common uses of Humic material (primarily weathered coal), the variety know as leonardite has been used both as a dispersant and for viscosity control on oil well drilling fluids, for ion-exchange resins in water treatment, and as a source of water-soluble brown stain for wood finishing."

Humic, Fulvic and Microbial Balance: ORGANIC SOIL CONDITIONING, William R. Jackson, Ph.D.. An Agricultural Text and Reference Book.

Leonardite: A Lignite Byproduct, Walter W. Foukes, Bureau of mines, project coordinator, Grand Forks, N. Dak. Leonardite is a coallike substance, similar in structure and composition to lignitic coal and believed to be derived from lignitic coal by the process of natural oxidation..... The higher oxygen content and less compact structure of leonardite, compared with lignite, make it undesirable as a fuel but indicate that it has potential as a source of chemicals and for other nonfuel uses. It is a convenient source of Humic acids.....Recent work on the chemistry of leonardite, and oxidized form of lignitic coal, revealed it to be mainly composed of the mixed salts of Humic acids..... Humates produced from leonardite were shown to have a beneficial effect on the rooting, growth, color, compactness, and quality of many plants.....A rich source of readily available humus material is offered by naturally oxidized lignite (leonardite). In many respects this material is identical with soil humus, having essentially the same source; both soil humus and coal humus represent the residual organic material from past plant generations. The Humic acids from both soil and oxidized coal are practically identical in chemical and physical properties and are indistinguishable by spectroscopic examination.....Although oxidation decreases the fuel value of coal, it increases the content of extractable alkaline Humic matter.....Coal humus is not merely organic matter that must be converted to humus, it is concentrated and rich in both organic and mineral substances essential to plant growth. the chemistry of humus is so confused that literally hundreds of definitions exist ranging from vague generalizations to terse oversimplifications.

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306

SINCE 1908

SGS Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

November 22, 1996

Sunray Mineral
1810 Shumway
Moab Utah 84532
Dick

Sample identification by

Kind of sample
Reported to us

Sunray Mineral
East
1 Bag 2.0 lbs.
Est. Top Size 2"

Sample taken at

Sample taken by

Date sampled ------

pH = 2.70

Date received November 20, 1996

Analysis Report No. 59-196862

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	13.14	xxxxx		
% Ash	38.27	44.06		
% Volatile	24.67	28.40		
% Fixed Carbon	23.92	27.54		
	100.00	100.00		
Btu/lb	5551	6391	MAF	11425
% Sulfur	2.13	2.45		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300

Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TELEPHONE: (801) 653-2311
FAX: (801) 653-2479

February 18, 1991

Slash S Cattle Co.
1810 Shumway Lane
Moab, Utah 84532

Sample identification by

Kind of sample Coal
Reported to us Upper Vein

Sample taken at

Sample taken by

Date Sampled February 11, 1991

Date received February 14, 1991

Analysis Report No. 59-126782

PROXIMATE ANALYSIS

	As Received	Dry Basis	
% Moisture	7.43	XXXXX	
% Ash	39.33	42.49	
% Volatile	26.90	29.06	
% Fixed Carbon	26.34	28.45	
	100.00	100.00	
Btu/lb	6003	6485	MAF 11276
% Sulfur	2.52	2.72	

pH = 2.0 Units

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306

SGS Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

November 22, 1996

Sunray Mineral
1810 Shumway
Moab Utah 84532
Dick

Sample identification by

Kind of sample reported to us — Sunray Mineral
Sample taken at — West
Sample taken by — 1 Bag 2.0 lbs.
Date sampled ------ — Est. Top Size 2"
Date received November 20, 1996 — pH = 2.85

Analysis Report No. 59-196863 Page 1 of 1

PROXIMATE ANALYSIS

	As Received	Dry Basis		
% Moisture	12.98	xxxxx		
% Ash	61.83	71.05		
% Volatile	18.62	21.40		
% Fixed Carbon	6.57	7.55		
	100.00	100.00		
Btu/lb	1390	1597	MAF	5516
% Sulfur	1.88	2.16		

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

-- APPLICATION --
EXEMPTION FOR COAL EXTRACTION INCIDENTAL TO THE EXTRACTION OF OTHER MINERALS
R645 Rules
For
ML #43377

R645 -106 - 311 applicant:
Sunray Mineral Products
Dick Shumway
1810 Shumway
Moab, Utah 84532
259-7893

-312 minerals sought to be extracted:

The coal vein is a low-rank weathered ("leonardite coal"), which is rich in natural organic trace minerals and acids. The unique coal weathering- reduction process experienced by the material at this particular location has unlocked numerous indigenous trace minerals and natural acids, contained in coal. This combination, of natural acids and trace minerals make a very good product for plant and soil conditioner.

-313 estimates of annual production of coal and other minerals:

No coal, for coal, will be produced or sold, We anticipate starting production of three thousand ton of material for soil conditioner, with a possible production growth of twenty to thirty thousand ton or more per year as our marketing and product expertise increase.

-314 estimated annual revenues from coal sales and other minerals:

No revenue will be derived from "coal" sales. Using a price of $40.00 ton for our bulk mineral/acid combination product, annual gross revenue estimates will start at $120 thousand with growth to $1 million or more per year as market expands.

-316 basis for annual estimates:

Annual estimates are based on existing contract, and a firm belief that the use of Organic soil conditioners will continue to spread. These products are now produced in several States, and are being marketed around the world.

-317 property Location:

See Location map. The subject property is located in Township 27 South, Range 9 East, Section 2, SW4 section, SLBM.

-318 estimate of acres in mining area:

The subject lease covers 160 acres, it is not known if the same reducing enviroment which affected our subject material has worked on the entire lease area. We know the right material lies under at least 60 of those acres. With harvest potential estimated at 15,000 tons of material per acre. A starting production of three thousand ton, impacting about 1/4 acre total, it will take several years before we are disturbing even 5 acres per year and several more to work the entire property area.

-319 evidence of publication in newspaper:

See attached

-320 Cross-section:

See Exhibit A

-321 map of area:

See Exhibit A

-322 general description of mining:

The surface in this area is the Mancos Shale formation, it consists of a very fine grained soil that is impervious to water, hence very little vegetation is now growing in this area as shown in photos. The subject material will be mined via, strip mine, beginning on the edge of the old existing pit. The deposit, generally has a shale and/or sandstone cap which varies from 3 to 10 foot.

The overburden will be excavated to expose the target material, which will then be harvested. Reclamation will be an on going process, the overburden removed from one strip it will be used to reclaim prior strip. Any topsoil mixed with sand or sandstone will build a soil far more penetrable and sympathetic to plant growth, therefore the surface after mining will have a better chance of sustaining plant growth than the natural surface at present. (See photos addendum) photos show the general mine area, old pit and present surface.

-323 summary of markets:

It is difficult to develop market without rights to material, but, I do have a small starting market for three thousand ton. We believe our market share will increase after we get into production. The potential market for this material continues to expand as former testing and experimentation procedures are put into action. Coal Humates, have also been used to rejuvenate land that was devastated from the over use of chemical fertilization, pesticides and/or toxic spills, refer to the college textbook; Humic, Fulvic and Microbial Balance: ORGANIC SOIL CONDITIONING, William R. Jackson, Ph.D.

R645-106-500 Requirements

510. Activities are exempt from the requirements of the act if all of the following are satisfied:

R645-106-511, - 512, The cumulative production of coal extracted from the mining area annually does not exceed 16 2/3 % of the total cumulative production of coal and other minerals removed.

No coal, for coal will be extracted or produced for sale. No commercially salable coal exists on this lease as evidenced from supporting information. The material is a low-rank coal derivative, "leonardite coal", which is <u>full of trace minerals and natural acids</u>, the total production will be for use of the trace minerals and natural acids as a soil conditioner. NO coal, for coal will be extracted from mining, therefore, coal production will not exceed 16 2/3 percent of the total cumulative production.

-513, Less than 50 % of total revenue will be derived from coal sales. IN FACT, NO, revenue will be derived from Coal fuel sales, Thus, Fair market value for this material will not be based on the low coal prices, but on the far more favorable market price received for the bulk soil conditioners.

-521 The abundant trace minerals and natural acid combinations available in this material make a mined product which is now commercially valuable.

AFFIDAVIT OF PUBLICATION

County of Sevier, State of Utah, ss.

I, SHERRIE OKERLUND, being first duly sworn, depose and say I am the Legal Secretary of THE RICHFIELD REAPER, a weekly paper having a bona fide circulation of more than 200 subscribers in the State of Utah, published every Wednesday at Richfield, Sevier County, Utah.

That the notice UTAH COAL MINING RULES a copy of which is attached hereto, was published in said paper for ONE consecutive issues, the first publication having been made in the issue of the 27 day of NOVEMBER 1996, and the last publication in the issue of the 27 day of NOVEMBER 1996, that the said notice was published in the regular and entire issue of every number of said paper during the period of times and publication, and that the same was published in the newspaper proper and not in a supplement.

Sherrie Okerlund

Subscribed and sworn to before me this 27 day of NOVEMBER, 1996

NOTARY PUBLIC
STATE OF UTAH
My Commission Expires
October 18, 1998
CHERRY L. NIEMEYER
P.O. Box 954
Richfield, Utah 84701

Cherry L Niemeyer
Notary Public

My Residence is Richfield, Sevier, County, Utah
My Commission Expires October 18, 1998

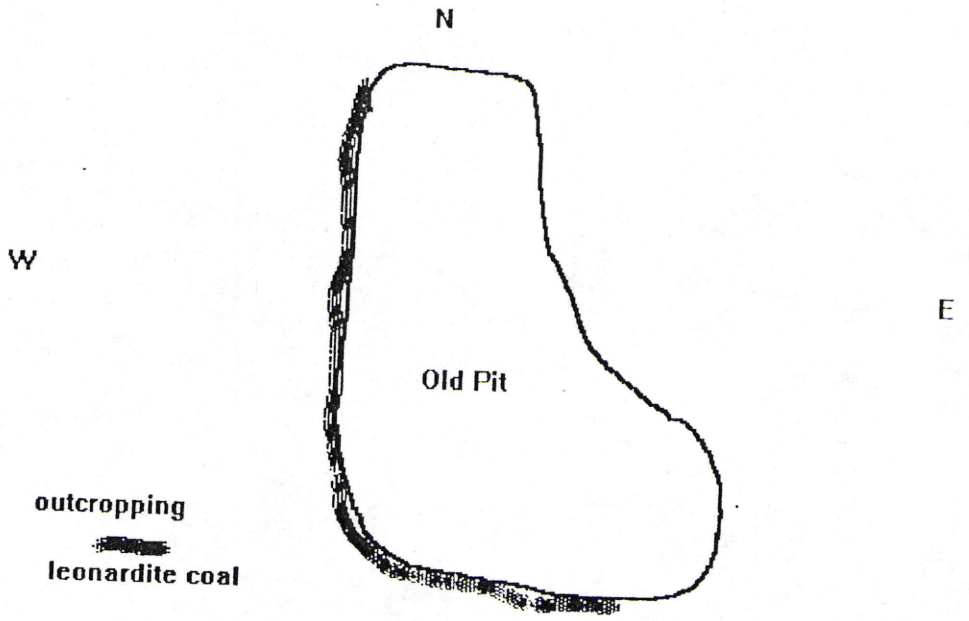
NOTICE

An application for exemption from the Utah Coal Mining Rules has been filed by: Sunray Mineral Products, Moab, UT, requesting a R645 exemption on T27S-R6#-Sec2-SW4, SLBM for the purpose of mining & producing a organic mineral soil conditioner from lignite coal. Send written comments or objections to: Division of Oil Gas & Mining, Bx 145801, SLC, UT 84114-5801.

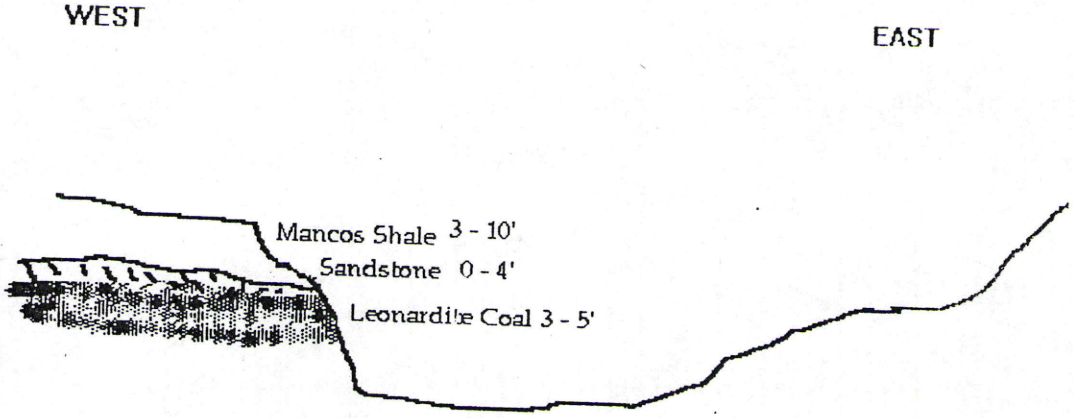
Published in The Richfield Reaper Nov. 27, 1996.

587

EXHIBIT A
ML #43377
Not to scale



GENERALIZED SECTION
of existing old pit



S
INTERIOR
VEY

Westwood Enterprises
Division of
Organa Mineral Products
2114 Hwy 6-50
Grand Junction, CO 81505

(303) 242-8595
(303) 242-8605

DATE:
November, 1996

TO:
SUNRAY MINERALS, INC.
1810 Shumway lane
Moab, UT 84532

Attn: Dick Shumway, Pres.

Dear Mr. Shumway:

After reviewing our previous conversation with you regarding the pit-run material situated on School Section #2, near Factory Butte, Wayne County, Utah, we are submitting an offer to purchase the material on the following basis;

3,000 tons of the bulk material (ground to minus 20 mesh) suitable for use as a soil conditioner. The material shall contain not less than 20% "humic" acid and will be delivered fob the mine site. The offering price is $53.00 per ton payable upon delivery.

Should Sunray Minerals, Inc. be unable to supply the "ground" material as specified, Westwood Enterprises will accept delivery of bulk material (pit-run) fob the mine, at a price of $39.00 per ton. The bulk material shall run a minimum of 20% humic acid and contain less than 6% moisture.

If the above offer meets your approval, we would appreciate an early response and confirmation regarding a delivery date. In order to better plan transportation, etc. please advise us as to which product, ground or pit-run, would be available to us.

Sincerely

Westwood Enterprises